



Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Application Number	09/466,325
Filing Date	December 17, 1999
First Named Inventor	Cynthia Briscoe
Art Unit	1743
Examiner Name	Brian J. Sines
Attorney Docket Number	A-70143/RMS/RMK

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**U.S. PATENT DOCUMENTS**

*Examiner Initials	Cite No.	DOCUMENT NUMBER Number - Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	US- 3,293,072	12/1996	Doolittle et al.	
	2.	US- 3,506,473	04/1970	Ettre et al.	
	3.	US- 3,574,029	04/1971	Ettre et al.	
	4.	US- 3,598,679	08/1971	Ettre et al.	
	5.	US- 3,948,706	04/1976	Schmeckenbecher	
	6.	US- 3,956,052	05/1976	Koste et al.	
	7.	US- 3,991,029	11/1976	Adelman	
	8.	US- 4,035,613	07/1977	Sagawa et al.	
	9.	US- 4,118,237	10/1978	Beall et al.	
	10.	US- 4,523,121	06/1985	Takahashi et al.	
	11.	US- 4,551,357	11/1985	Takeuchi	
	12.	US- 4,610,741	09/1986	Mase et al.	
	13.	US- 4,806,295	02/1989	Trickett et al.	

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		Country Code:	Number - Kind Code (if known)				YES	NO
	14.	JP	3-148196	06/1991	Toray Eng. Co. Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	15.	JP	63-239999	10/1988	NGK Insulators Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	16.	JP	4-114961	04/1992	Mitsubishi Materials Corp.		<input type="checkbox"/>	<input type="checkbox"/>
	17.	JP	2-166793	06/1990	Fujitsu Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	18.	JP	8-267421	10/1996	KK Sumitomo Kinzouku Electro		<input type="checkbox"/>	<input type="checkbox"/>
	19.	JP	5-267844	10/1993	NGK Insulators Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	20.	JP	2-219603	09/1990	Mitsubishi Mining & Cement Co. Ltd.		<input type="checkbox"/>	<input type="checkbox"/>

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**OTHER DOCUMENTS - NON-PATENT LITERATURE DOCUMENTS**

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	TRANSLATION	
			YES	NO
BJS	23.	Burns et al., "An Integrated Nanoliter DAN Analysis Device", Science Magazine, 282:484-487 (1998).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	24.	Espinoza-Vallejos et al., "MESO (Intermediate)-Scale electromechanical systems for the measurement and control of sagging in LTCC structures", Med. Res. Soc. Symp. Pros. 518:73-79 (1998).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	25.	Ghandi, "VLSI Fabrication Principles", A Wiley-Interscience Pub., Ch. 10 (1983).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	26.	Gongora-Rubio et al., "Overview of low temperature co-fired ceramics tape technology for meso-system technology (MsST)", Sensors and Actuators A: Physical. Vol. 89, Issue 3, pp. 222-241 (2001).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	27.	Gongora-Rubio, et al., "A Meso-scale Electro-magnetically actuated normally closed valve realized on LTCC tapes", Part of the SPIE Conference on Microfluidic Devices and Systems II, SPIE 3877:230-239, (1999).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	28.	Gongora-Rubio, et al., "A simple thermistor based flow sensor using the LTCC-ML technology", Quimica Analitica, 18:30-31 (1999).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	29.	Gongor-Rubio, et al., "The utilization of low temperature co-fired ceramics (LTCC-ML) technology for meso-scale EMS, a simple thermistor based flow sensor", Sensors and Actuators, 73:215-221 (1999).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	30.	Gui, Z. et al., "Influence of additives on sintering processing and properties of high performance piezoelectric ceramics", Solid State Phenomina, Vols. 25 & 26: 309-316 (1992).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	31.	Kim, et al., "The fabrication of flow conduits in ceramic tapes and the measurement of fluid flow through these conduits", Micro-Electro-Mechanical Systems (MEMS), DSC Vol. 66, pp. 171-177 (1998).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	32.	Kricka, "Revolution on a square centimeter", Nat. Biotechnol. 16 (6):513-514 (1998).	<input type="checkbox"/>	<input type="checkbox"/>
BJS	33.	Liu, et al., "Study of thick-film pH sensors", Sensors and Actuators, Vol. 13-14:566-567 (1993).	<input type="checkbox"/>	<input type="checkbox"/>

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**U.S. PATENT DOCUMENTS**

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	35.	US- 4,833,000	05/1989	Trickett et al.	
	36.	US- 4,929,295	05/1990	Kohno et al.	
	37.	US- 4,939,021	07/1990	Aoki et al.	
	38.	US- 4,985,098	01/1991	Kohno et al.	
	39.	US- 4,991,283	02/1991	Johnson et al.	
	40.	US- 5,008,151	04/1991	Tominaga et al.	
	41.	US- 5,089,071	02/1992	Tominaga et al.	
	42.	US- 5,174,842	12/1992	Hamuro et al.	
	43.	US- 5,176,771	01/1993	Bravo et al.	
	44.	US- 5,254,191	10/1993	Mikeska et al.	
	45.	US- 5,261,986	11/1993	Kawabata et al.	
	46.	US- 5,265,327	11/1993	Faris et al.	
	47.	US- 5,271,150	12/1993	Inasaka	
	48.	US- 5,304,487	04/1994	Wilding et al.	

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		Country Code:	Number - Kind Code (if known)				YES	NO
	49.	JP	63-42147	02/1998	Shinko Electro Ind. Co. Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	50.	JP	53-49264	05/1978	Fujitsu Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	51.	JP	6-290987	10/1994	Noritake Co. Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	52.	JP	6-104572	04/1994	Hitachi Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	53.	JP	8-108422	04/1996	NGK Insulators Ltd.		<input type="checkbox"/>	<input type="checkbox"/>

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*Brian Sines*

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*10/28/2002*

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Art Unit	1734
Examiner Name	Brian J. Sines
Attorney Docket Number	A-70143

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## OTHER DOCUMENTS - NON-PATENT LITERATURE DOCUMENTS

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			YES	NO
BJS	54.	Madou, "Fundamentals of MicroFabrication", 498-502 (1979).	<input type="checkbox"/>	<input type="checkbox"/>
	55.	Man et al., "Microfluidic Plastic Capillaries on Silicon Substrates: A New Inexpensive Technology for Bioanalysis Chips", IEEE MEMS Conference, 311-316, (1997).	<input type="checkbox"/>	<input type="checkbox"/>
	56.	Mistler, "Tape casting: The basic process for meeting the needs of the Electronics Industry", Ceramic Bulletin, 69(6):1022-1026 (1990).	<input type="checkbox"/>	<input type="checkbox"/>
	57.	Topfer, "Chapter 3: Technology", Thick-Film Microelectronics 40-59, (1977).	<input type="checkbox"/>	<input type="checkbox"/>
	58.	Provance, "Performance review of thick film materials", reprinted from Insulation Circuits. Pp. 33-36 (1977).	<input type="checkbox"/>	<input type="checkbox"/>
	59.	Santiago-Aviles et al., "The utilization of low temperature co-fired ceramic tapes for 3 dimensional meso-scale fabrication", Quimica Analitica, 19(supp. 1):33-34 (1999).	<input type="checkbox"/>	<input type="checkbox"/>
	60.	Waters et al., "Microchip Device for Cell Lysis, Multiplex PCR Amplification and Electrophoretic Sizing", Analytical Chemistry, 70:158-162 (1998).	<input type="checkbox"/>	<input type="checkbox"/>
	61.	Wiranto et al., "Microfabrication of Capillary Columns on Silicon", Proceedings of SPIE, 3242:59-64 (1997).	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

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	62.	US 5,312,674	05/1994	Haertling et al.	
	63.	US- 5,358,593	10/1994	Hamuro et al.	
	64.	US- 5,435,875	07/1995	Saitoh et al.	
	65.	US- 5,478,420	12/1995	Gauci et al.	
	66.	US 5,480,614	01/1996	Kamahori	
	67.	US- 5,534,092	07/1996	Ogawa et al.	
	68.	US- 5,534,328	07/1996	Ashmead et al.	
	69.	US- 5,538,582	07/1996	Natarajan et al.	
	70.	US- 5,540,884	07/1996	Yi-Hung Chiao	
	71.	US- 5,565,729	10/1996	Faris et al.	
	72.	US- 5,585,069	12/1996	Zanzucchi et al.	
	73.	US- 5,595,712	01/1997	Harbster et al.	
	74.	US- 5,601,673	02/1997	Alexander	
	75.	US- 5,603,351	02/1997	Cherukuri et al.	
	76.	US- 5,607,535	03/1997	Tsukada et al.	
	77.	US- 5,611,214	03/1997	Wegeng et al.	

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		Country Code:	Number - Kind Code (if known)				YES	NO
	78.	JP	4-18795	01/1992	Fujitsu Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	79.	JP	6-152135	05/1994	Nippon Cement KK		<input type="checkbox"/>	<input type="checkbox"/>
	80.	JP	2-117117	05/1990	Matsushita Electric Ind. Co. Ltd.		<input type="checkbox"/>	<input type="checkbox"/>

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	81.	US- 5,614,053	03/1997	Toudo et al.	
	82.	US- 5,632,876	05/1997	Zanzucchi et al.	
	83.	US- 5,639,423	06/1997	Northrup et al.	
	84.	US- 5,639,508	06/1997	Okawa et al.	
	85.	US- 5,646,039	07/1997	Northrup et al.	
	86.	US- 5,676,788	10/1997	Natarajan et al.	
	87.	US- 5,681,410	10/1997	Takeuchi et al.	
	88.	US- 5,683,535	11/1997	Karr	
	89.	US- 5,707,476	01/1998	Bezama et al.	
	90.	US- 5,720,927	02/1998	Cripe et al.	
	91.	US- 5,728,244	03/1998	Nanataki et al.	
	92.	US- 5,746,874	05/1998	Natarajan et al.	
	93.	US- 5,753,060	05/1998	Haruiko Mori	

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		Country Code:	Number - Kind Code (if known)				YES	NO
	94.	WO	00/21659	04/2000	Motorola, Inc.		<input type="checkbox"/>	<input type="checkbox"/>
	95.	WO	01/35484	05/2001	The Trustees of the University of Pennsylvania		<input type="checkbox"/>	<input type="checkbox"/>
	96.	JP	7-289886	11/1995	Hokkaido Prefecture		<input type="checkbox"/>	<input type="checkbox"/>
	97.	EP	0313090	04/1989	Asahi Kogaku Kogyo Kabushiki Kaisha		<input type="checkbox"/>	<input type="checkbox"/>
	98.	EP	0649008 A2	10/1994	NGK Insulators, Ltd.		<input type="checkbox"/>	<input type="checkbox"/>

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	99.	US 5,759,320	06/1998	Natarajan et al.	
	100	US- 5,779,833	07/1998	Cawley et al.	
	101	US- 5,785,800	07/1998	Natarajan et al.	
	102	US- 5,792,379	08/1998	Dai et al.	
	103	US 5,795,422	08/1998	Chatterjee et al.	
	104	US- 5,795,545	08/1998	Koripella et al.	
	105	US- 5,811,062	09/1998	Wegeng et al.	
	106	US- 5,821,181	10/1998	Bethke et al.	
	107	US- 5,842,106	11/1998	Thaler et al.	
	108	US- 5,855,803	01/1999	Bailey et al.	
	109	US- 5,856,174	01/1999	Lipshutz et al.	
	110	US- 5,858,193	01/1999	Zanzucchi et al.	
	111	US- 5,858,195	01/1999	Ramsey	
	112	US- 5,860,202	01/1999	Okawa et al.	
	113	US- 5,863,708	01/1999	Zanzucchi et al.	
	114	US- 5,906,723	05/1999	Mathies et al.	

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	115	EP	0744389	11/1996	NGK Insulators, Ltd.		<input type="checkbox"/>	<input type="checkbox"/>
	116	JP	61-288154	12/1986	Yokogawa Electric Corporation		<input type="checkbox"/>	<input type="checkbox"/>
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	117	US 5,922,591	07/1999	Anderson et al.	
	118	US- 5,939,291	08/1999	Loewy et al.	
	119	US- 5,939,312	08/1999	Baier et al.	
	120	US- 5,958,694	09/1999	Nikiforov et al.	
	121	US 5,961,930	10/1999	Chaterjee et al.	
	122	US- 5,961,932	10/1999	Ghosh et al.	
	123	US- 5,965,092	10/1999	Chatterjee et al.	
	124	US- 5,971,355	10/1999	Bjegelsen et al.	
	125	US- 5,976,472	11/1999	Chatterjee et al.	
	126	US- 5,985,119	11/1999	Zanzucchi et al.	
	127	US- 5,993,750	11/1999	Ghosh et al.	
	128	US- 6,043,080	04/2000	Lipshutz et al.	
	129	US- 6,074,827	06/2000	Nelson et al.	
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